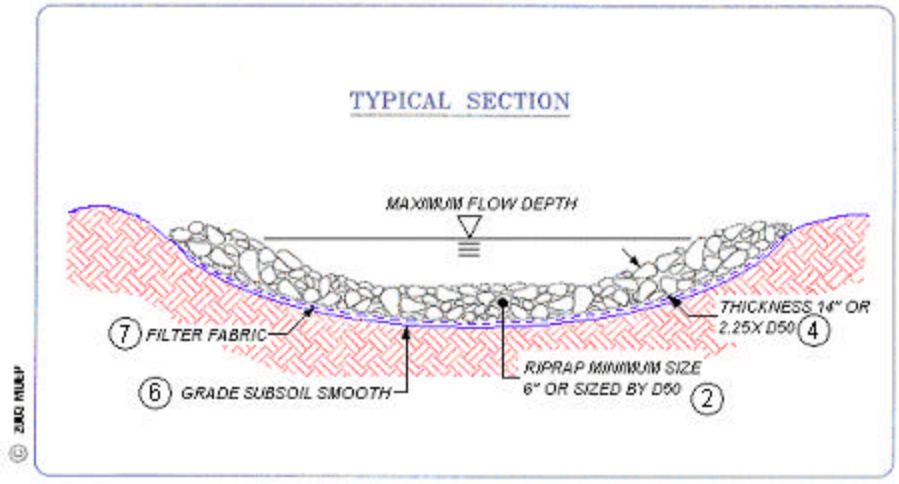
RIPRAP -- DITCH STABILIZATION



Typical installation of riprap ditches is shown above with specifications below. Riprap is a permanent, erosion-resistant ground cover constructed of large, loose, angular or sub-angular (rounded) stone. This practice is applicable where the soil conditions, water turbulence and velocity, expected vegetative cover, etc., are such that the soil may erode under the design flow conditions.

INSTALLATION

1. Stabilize slopes greater than 8% with riprap.
2. The minimum riprap D50 size is 6 inches. The D50 size refers to the median diameter of the stone. This is the size for which 50 percent, by weight, will be smaller and 50 percent will be larger.
3. Use sub-angular fieldstone or rough unhewn quarry. The stone must be hard and resistant to weathering.
4. Make the riprap layer 2.25 x D50 in thickness. The minimum thickness for a D50 of 6 inches would be 14 inches.
5. Remove brush, trees, stumps and other objectionable material (i.e., organic matter).
6. Compact the subgrade to a density approximating that of the surrounding undisturbed material.
7. Install a geotextile filter cloth in the ditch according to the manufacturer's recommendations. The upper end should be buried and the lower end should be toed in. Fabric should fit to the soil in the ditch line without gaps.
8. Start stone placement at the bottom of the ditch line and work upwards, making sure the layer is at least two stones thick and completely covers the fabric.

MAINTENANCE

- Inspect riprap swales periodically to determine if high flows have caused scour beneath the riprap or dislodged any stone. Repair immediately.

See *Maine Erosion and Sediment Control BMPs* (3/2003) Section E-6 for more information.